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LII. *A Letter to the right honourable the Earl of Macclesfield, President of the Royal Society, from Mr. Benjamin Wilson, F.R.S. concerning some electrical Experiments, made at Paris.*

My Lord,

Sept. 18, 1753, Great Queen-str.
London.

Read Dec. 6, 1753. **O**N the 7th of this month I was at the palace of St. German's near Paris, where I had the satisfaction of seeing Dr. le Monnier's experiment relating to the electricity of the air; of which an account was sent me by Abbè Mazeas, and was read before our honourable Society in December last; and I observed, that though the wind was westerly, and the air moist, yet the suspended wire, at different times, attracted very light bodies, at very small distances; the mean of which distances seem'd to be about $\frac{1}{10}$ of an inch.

Abbè Mazeas informed me, that Dr. le Monnier, some months ago, had read a paper, at a meeting of the Royal Academy of Sciences, in which he told them, that he had great reason to believe the electric matter did not come from the *earth* at all, but from the *air*. Upon my mentioning this to the Doctor, I found him still of the same opinion.

As there was a convenient *apparatus* in his apartment, I propos'd making the experiments: for I always thought that the electric matter came from both, but principally from the earth; and that, probably, a difference of 10 to 1 would be perceived, upon making the experiments.

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The machine was suspended by silk lines, in such a manner, that every part of it was not less than two feet distant from any non-electric. The lines were dried by a chafing-dish of fire made with charcoal, as was likewise the glass globe; and every other precaution was strictly observed, that seemed necessary for making the experiments.

The Doctor appeared to be well versed in electrical inquiries, and shewed great judgment in conducting the whole. He got upon the suspended *apparatus* himself, and rubbed the globe with both his hands; whilst another person, who was likewise suspended, turned the wheel of the machine. Close to the globe was a slender slip of lead; at one end of which was fastened some brass tinsel, to serve as a collector of the electric matter. The other end of the lead had a communication with a tin tube, which was supported by silk lines about a foot in length: and as this tube hung higher than I could reach, another was hooked to it by means of a wire which hung down to a convenient distance.

As I stood upon the floor, I took hold of this last tube, whilst the glass was rubbed, that the *apparatus*, and the persons on it, might lose as much of their natural electricity as possible under such circumstances. On removing my hand, and afterwards approaching the tube, sometimes with my finger, and at other times with a key, we observed very small explosions, which were little more than just sensible.

I then desired one of the Doctor's servants (who likewise stood upon the floor) to lay hold of the suspended *apparatus* on which the Doctor was mounted, whilst the friction of the globe was continued. Im-
mediately

mediatley on approaching the tube as before, with my finger, and then with the key, a very great difference was observed; for now the explosion was very large compared with the former trials. Doctor le Monnier desired the experiments might be repeated; which was done several times, and, to all appearance, the differences were the same.

He was perfectly satisfied that the experiments were fairly made, and that the explosion was much greater when the *apparatus* communicated with the *earth*, than when it communicated with the *air* only.

As several gentlemen of the Royal Academy of Sciences in Paris were of opinion that these experiments deserved attention, I thought your lordship would not be displeased, if I did myself the honour of communicating them.

I am,

My Lord,

Your Lordship's most obedient;

and obliged humble servant,

Benjamin Wilson.

For a series of experiments and observations where the whole electrical apparatus was supported by electrics *per se*, see *Phil. Trans.* Vol. XLIV. p. 713 — 729 — 739, 740. See also Vol. XLV. p. 93 — 101 and Vol. XLVII. p. 371, 373. And Mr. Wilson's *Essay*, and *Treatise, on Electricity*.